Ehlers, E. 1897. Polychaeten. Hamburger Magalhaenischen Sammelreise. Friedrichsen and Co., Hamburg, 148 pp.

Fauchald, K. 1976. Polychaetes from intertidal areas in Panama, with a review of previous shallow-water records. Smiths. Contr. Zool., in press.

Hartman, O. 1940. Polychaetous annelids. Pt. 2. Chrysopetalidae to Goniadidae. Allen Hancock Pacific Exped., 7:173–287.

———. 1948. The marine annelids erected by Kinberg, with notes on some other types in the Swedish State Museum. Ark. Zool., 42A(1):1–137.

———. 1950. Polychaetous annelids. Goniadidae, Glyceridae, Nephtyidae. Allan Hancock Pacific Exped., 15:1–181.

———. 1953. Non-pelagic polychaeta of the Swedish Antarctic Expedition 1901–1903. Further Zool. Res. Swedish Antarctic Exped., 4(11):1–83.

Hartman-Schröder, G. 1965. Zur Kenntnis des Sublitorals der chilenischen Küste unter besondered Berücksichtigung der Polychaeten und Ostracoden. Teil II. Die Polychaeten des Sublitorals. Mitt. Hamburg Zool. Mus. Inst., 62 (Suppl): 59–305.

Kinberg, J. G. H. 1866. Annulata nova. Ofvers. Vet. Akad. Stockholm, Förh., 22:239–258.

Monro, C. C. A. 1933. The polychaeta errantia collected by Dr. C. Crossland at Colon in the Panama region and the Galapagos Islands during the expedition of the S. Y. St. George. Proc. Zool. Soc. London, 1933:1–96.

Nonato, E., and J. A. C. Luna 1970. Anelidos poliquetas do nordeste do Brasil. I.—Poliquetas bentonicos de costa de Alagoas e Sergipe. Bolm Inst. Oceanog. Sao Paulo, 19:57–130.

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A NEW SPECIES OF *DIOPLOSYLLIS* (POLYCHAETA: SYLLIDAE) FROM CALIFORNIA

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ABSTRACT: A new species of *Dioplosyllis* is described. Three specimens were collected swarming at a night light. A table is presented to separate the four known species.

Dioplosyllis broadi, new species
Figures 1–6

Material Examined: Three epitokous specimens were taken at a night light located in Fishermans Cove, Santa Catalina Island, California. An anterior fragment with seven setigers was collected on 18 August 1973, and two complete specimens were collected on 19 August 1973. (Holotype No. POLY 1141, deposited in Allan Hancock Foundation; Paratype No. 740, deposited in University of Alaska Museum.)

General Description: The complete specimens are 22 and 24 mm long, 2.0 and 2.1 mm wide without parapodia and 6.0 and 6.1 mm wide with parapodia. The specimens consist of 13 setigers, a buccal segment and an asetigerous preanal segment. The outline in cross-section is ellipsoidal, strongly arched dorsally and flattened ventrally. The body in outline is tapered from the median segment to both ends. The median segment is twice the width of the anterior and posterior ends.

The body is brownish purple dorsally and lighter in color ventrally. Each segment (Fig. 1) appears regularly wrinkled with from two wrinkles on the buccal segment to 12 wrinkles on the fourth. Each wrinkle has a purple stripe with a cream colored valley in between. The parapodial wrinkles run parallel to the long axis of the body with each stripe strewn with white spots. The dorsal and ventral cirri have ten longitudinal stripes made up of rows of small purple pigment spots. The eyes in life are red-orange in color.

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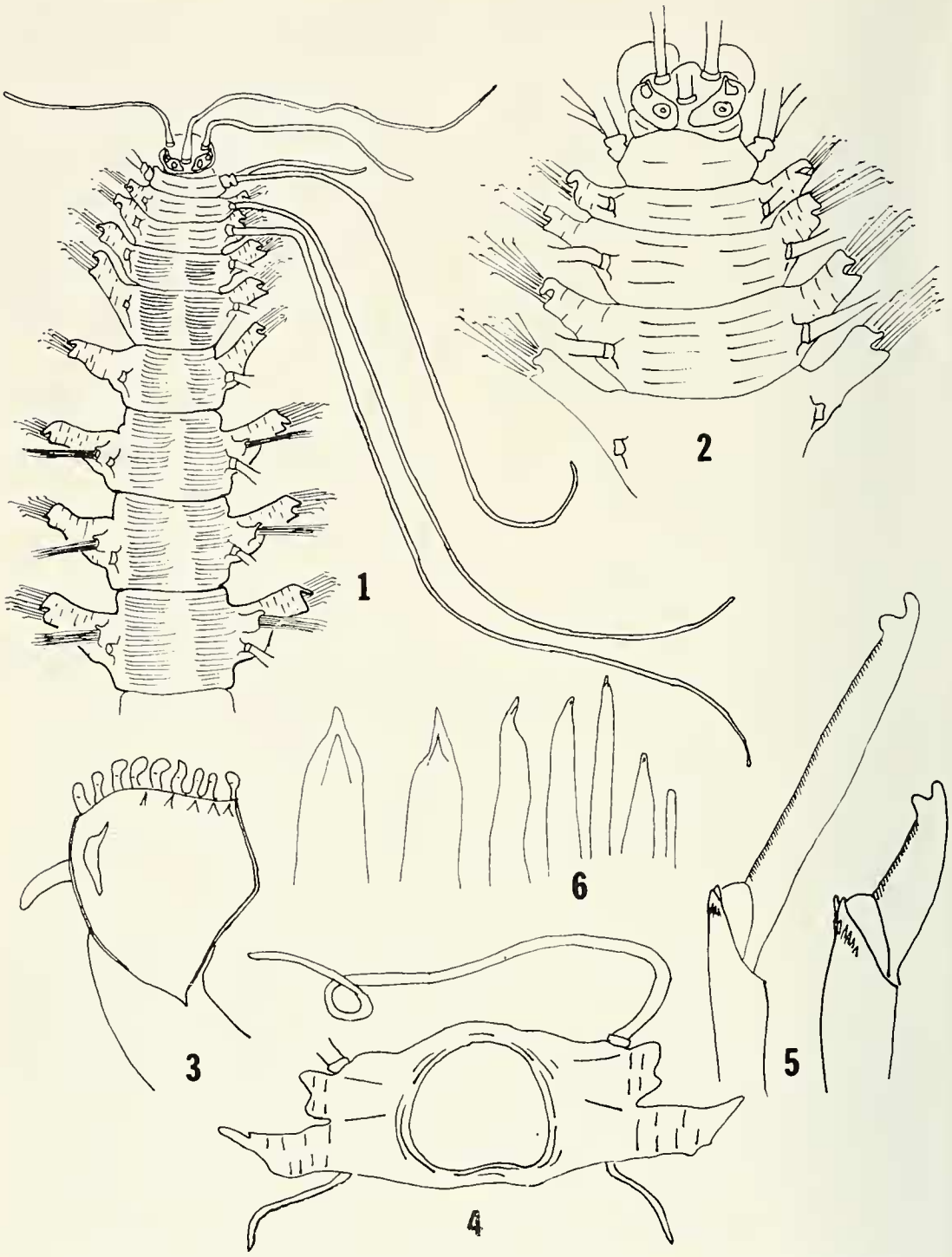

Figures 1–6. Dioplosyllis broadi, new species. *1*, Dorsal view of anterior end, × 10; *2*, Dorsal view of anterior end showing prostomial details, × 20; *3*, Distal end of pharynx showing digitiform process, ×40; *4*, Seventh setiger, anterior view; *5*, Compound falcigers from neuropodium of seventh setiger, ×500; *6*, Neuropodial acicula from seventh segment, ×500.

TABLE 1. Diagnostic characters of the species in the genus *Dioplosyllis*.

Character	*D. broadi*	*D. infuscata* (From Ehlers 1901)	*D. japonica* (From Imajima and Hartman 1964)	*D. cirrosa* (From Gidholm 1962)
Palpostyle	present	absent	present	absent
Cutting margin of falciger	minute serrations	minute serrations	smooth	distinct serrations
Nuchal ridge	present	absent	present	present
Position of proventriculus	3–6 setiger	?	4–7th setiger	12–15th setiger
Distal papillae	10	10	10	13
Pharyngal teeth of epitoke	5 small 1 large	?	6 small 1 large	5 small 1 large
Eye color	red-orange	red-brown	purple	?
Anterior eyes with tapered cone	present	absent	absent	absent
Setigers	13	13	?	63
Distal end of setal shaft	bifid	entire	entire	bifid

The prostomium (Fig. 2) is twice as wide as long with two pairs of eyes, the anterior are further apart than the posterior. The anterior eyes taper into an elevated cone and do not appear to have a pupil. The posterior eyes are raised into subelliptical elevations and each eye has a pupil. Three antennae are present with the median one inserted between the posterior pair of eyes and the lateral ones slightly antero-medial to the anterior pair of eyes. The median antenna is approximately ⅓ longer than the lateral antennae and reaches the sixth setiger. A pair of nuchal ridges is present on the posterior margin of the prostomium.

The palps are slightly more than twice as long as the prostomium. They are thick and flattened dorsoventrally with a slightly expanded proximal portion where the palps are fused at the base. Each palp has a minute style inserted laterally in a cleft approximately ⅙ of the distance from the anterior edge. The pharynx (Fig. 3) has ten soft papillae equal in size and evenly distributed around the distal margin. Five small recurved teeth are present slightly posterior to the papillae, and are evenly distributed around the lateral and ventral ¾ of the pharynx. Subdistal to the anterior margin, there is a single mid-dorsal tooth. On the inside of the pharynx, facing the coelom and opposite the mid-dorsal tooth, there is a long digitiform process (Fig. 3) approximately the same size as the tooth. The proventriculus extends from setiger 3 to setiger 6.

The peristomium is midway in width between the prostomium and the first setiger and is ½ as long as the first setiger. Two pairs of cirri are present, with the ventral ones about half as long as the dorsal cirri, which reach the eighth setiger. These cirri and all others are irregularly wrinkled.

Each parapodium of the first setiger is about ½ as long as the segment is wide. Each terminates in a superior triangular presetal lobe and a shorter truncate postsetal lobe. The long dorsal cirri reach setiger 11 and are inserted on a small elevated lobe at the base of the parapodia. The ventral cirri reach the middle of the next setiger and are inserted on the proximal third of the parapodia. A normal segment (Fig. 4) differs from the first setiger in having longer parapodia. A nephridial depression is present slightly anterior to the mid-parapodial line at the base of the parapodium on setigers 4 through 13.

The capillary setae characteristic of the epitoke vary in thickness and are first present from setiger 6. They arise from a lobe between the dorsal cirri and neuropodia. Ventral to the capillary setae is a notopodial acicular lobe containing six to seven acicular setae. The neuropodial setae (Fig. 5) are compound falcigers; the blade has a minutely serrated cutting edge and each has a short subdistal tooth and bifid tip. The end of the shaft has a subdistal row of small spines; the distal tip is bifid. The superior setae have a longer appendage than the inferior ones. Distally, the neuropodial acicula (Fig. 6) taper sharply; what appears to be longitudinal grooves are present at the tapered end.

The preanal segment is asetigerous and has reduced parapodia. Both the dorsal and ventral cirri are normal. The pygidium has two ventral cirri. The four species of *Dioplosyllis* are compared in table 1.

Etymology: This species is named after A. Carter Broad who stimulated one of the author's (Mueller) interest in polychaetes by posing a question in polychaete systematics.

LITERATURE CITED

Ehlers, E. 1901. Die Polychaeten des Magellanischen und Chilenischen Strandes. Ein faunistischer Versuch. Festschrift zur Feier des Hundert-fünfzigjahrigen Bestehens der Koniglichen Gesellschaft der Wissenschaften zu Göttingen. (Abh. Math,-Phys.) Berlin, Weidmannsche Buchhandlung. pp 1–232, pls. 1–25.

Gidholm, L. 1962. Sur quelques polychetes Syllidiens des Sables de la Region de Roscoff avec description de deux nouvelles especes. Cahiers de Biol. Mar., 3:249–260, fig. 1–3.

Imajima, M., and O. Hartman 1964. The Polychaetous Annelids of Japan. Alan Hancock Foundation Publications, Occas. Paps., 26:1–452, map, pls. 1–38.

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A NEW SPECIES OF CYCLOPOID COPEPOD, PARASITIC ON SHINER SURFPERCH, *CYMATOGASTER AGGREGATA* GIBBONS, IN ANAHEIM BAY AND HUNTINGTON HARBOR, CALIFORNIA, WITH NOTES ON *BOMOLOCHUS CUNEATUS* FRASER AND *ERGASILUS LIZAE* KRØYER

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Abstract: Three species of parasitic cyclopoid copepods are reported from the Shiner Surfperch, *Cymatogaster aggregata* Gibbons, collected from Anaheim Bay and Huntington Harbor, California. One of the copepods, *Holobomolochus embiotocae,* new species, of the family Bomolochidae inhabits the nasal cavity of the shiner perch. The other two copepods, *Bomolochus cuneatus* Fraser and *Ergasilus lizae* Krøyer, are reported as new host and locality records.

The three species of cyclopoid copepods reported herein are part of a collection made by the author while examining the ectoparasites of the surfperch, Embiotocidae, in Anaheim Bay and Huntington Harbor, California. Anaheim Bay is a salt water marsh with a year-round opening to the sea and is without a fresh water inlet, other than rainwater run off. Huntington Harbor is an adjoining small boat marina. Five hundred and nineteen shiner perch from monthly collections made between 24 March 1973 to 30 March 1974 were examined. The fish were obtained by otter trawl and gill net, then individually bagged and placed on ice for later laboratory examination with the aid of a dissecting microscope.

Holobomolochus embiotocae, new species

Material examined: 603 females (395 ovigerous) and 41 males were removed from the nasal cavities of the shiner perch, *Cymatogaster aggregata* Gibbons (the type host). The incidence of infestation was 67.6 percent. The holotype USNM 151182, allotype USNM 151183, and paratypes USNM 151184 are deposited in the U.S. National Museum, Washington, D.C.

Description: *Female.* Body (Fig. 1) mean length of 26 randomly selected ovigerous females 0.938 mm with a standard deviation of 0.125 mm. Cephalon comprising about one-fourth of the total body length.

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Figures 1–10. Holobomolochus embiotocae, new species, female. *1*, Body, with egg sacs removed; *2*, Genital segment and abdomen; *3*, First antenna; *4*, Rostral tines; *5*, Second maxilla. *6*, Egg sac removed; *7*, First maxilla; *8*, Second antenna; *9*, Paragnath; *10*. Mandible. Scales: Fig. 1, 0.5 mm; Figs. 6, 8, and 10, 0.05 mm; Figs. 2 and 3, 0.1 mm; Figs. 4, 5, 7, and 9, 0.01 mm.